

# Missoula Plan

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SC Telephone Coalition

Workshop  
May 31, 2007



# History of Missoula

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- ICF- Intercarrier Compensation Forum
- Portland Group- (Based On SC Plan)
- Expanded Portland
  - ARIC Alliance for Rational Intercarrier Compensation
- Rural Alliance- (SC pull out)
- NARUC process
- Formation of Missoula Group



# Basic Benefits of the Plan

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- Eliminate state/interstate arbitrage
- Addresses Phantom traffic issues
- Establishes a “bulk” billed access recovery system



# Why Many Small Companies Support the Plan

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High state access rates...



# Why SC Small LECs do not Support the Plan

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- Impact on state consumers
- Fails to fully recognize SC actions to lower state access rate
- Fails to address evolving broadband environment-(Technology Arbitrage)
- Fails to create unified rates

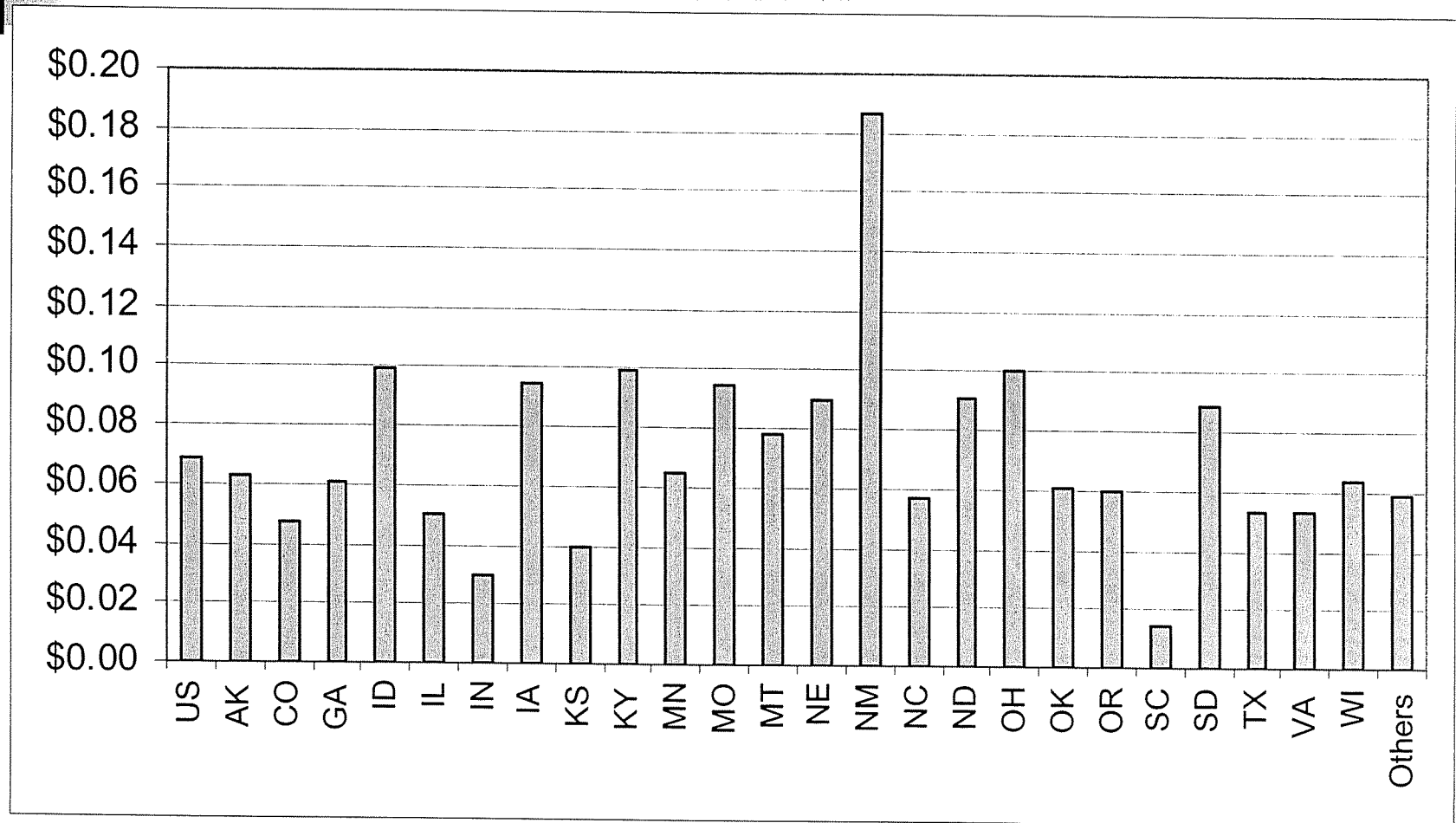


# SC PSC has been LEADER in the Field of ACCESS REFORM

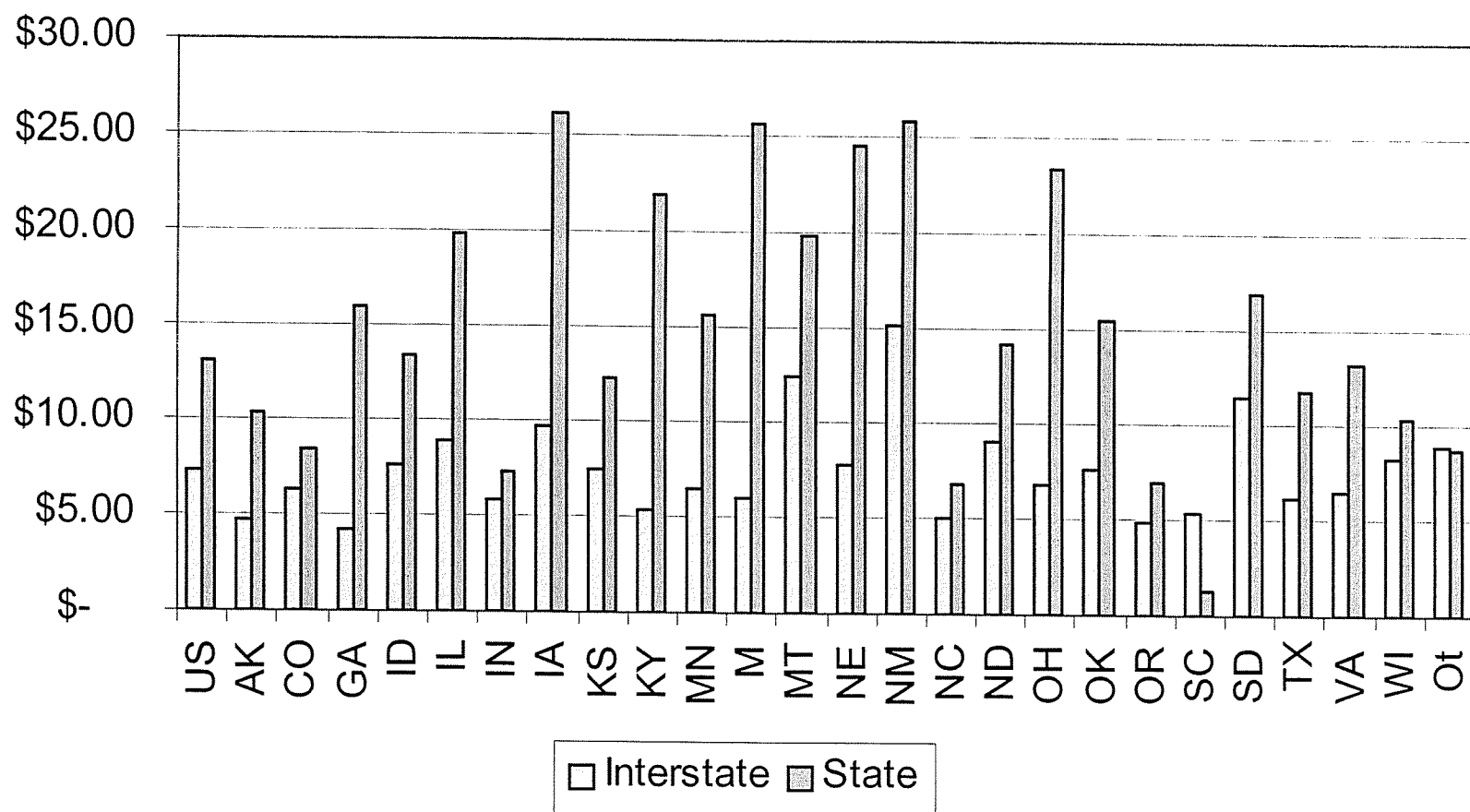
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- Lowered state access rates-created state ILF (Bulk access)
- Rebalanced basic local service rates
- Created State USF

# State Access Rates/Min. - States



# Billed Access/Line-States





# Summary of Missoula Impact on SC Consumers

	Access Lines	\$\$
<b>SLC Increase</b>		
<b>Calls LECS</b>	<b>1,060,749</b>	<b>\$ 44,551,453.27</b>
<b>Mag LECS</b>	<b>343,795</b>	<b>\$ 9,282,465.00</b>
		<b>\$ 53,833,918.27</b>
<b>Less Category A Funds</b>		<b>\$ (6,000,000.00)</b>
<b>Category B &amp; C Funds</b>		<b>\$ (10,000,000.00)</b>
<b>Plan Net Cost per sub \$0.38 per mo.</b>	<b>1,404,544</b>	<b>\$ 6,404,720.13</b>
<b>Net Cost to SC Residents</b>		<b>\$ 44,238,638.40</b>



# CONCLUSION

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- The Missoula plan is too little too late
- South Carolina addressed intrastate access rates 10 years ago
- The plan takes 5 years to implement, technology will render the plan obsolete before it is implemented
- The plan leaves major issues un-addressed
- Time and energy better spent on comprehensive plan that works in a broadband environment

# OPASTCO Advocate

May 2007

Organization for  
the Promotion  
and Advancement  
of Small  
Telecommunications  
Companies

editor's

NOTE

## Copps and Adelstein Raise Flags On Identical Support Rule

by Michael Mallinger

In the April edition, OPASTCO highlighted recent statements made by FCC Chairman Martin and Commissioner Deborah Taylor Tate attributing growth in the Universal Service Fund (USF) to support that is provided to wireless competitive eligible telecommunications carriers (CETCs). Martin raised questions about the identical support rule. However, Chairman Martin is not the only Commission member to question whether or not the rule serves the public interest.

On March 1, Commissioner Copps testified before the Senate Commerce Committee about USF reform issues. Copps recommended that the identical support rule be eliminated:

"...[I]t is as clear as clear can be that the costs of investing and maintaining wireless and wireline infrastructure are inherently different. I believe that wireless can and should be a part of universal service, but the time has come to put an end to the irrational and costly system of supporting wireless carriers based on the cost of wireline incumbents. The identical support rule is the subject of a five-year old Joint Board referral; I believe it is high time for the board to make a recommendation to the full Commission so we can take corrective action."

This is not the first time that Commissioner Copps has articulated concerns about the identical support rule. On January 22, 2004, the FCC released an Order on Virginia Cellular's petition for ETC status in the state of Virginia. In his statement on the Order, Copps said:

*"We must give serious consideration to the consequences that flow from using the fund to support multiple competitors in truly rural areas. And when we do fund competition, we need to ensure that we provide the appropriate level of support."*

Similarly, at OPASTCO's 2004 Annual Winter Convention, Commissioner Adelstein addressed a number of USF support distribution issues. Adelstein also called for reforming the identical support rule:

*"A large number of CETCs are wireless carriers. Wireline and wireless carriers provide different types of services and operate under different rules and regulations. Their cost structures are not the same. To allow a wireless CETC to receive the same amount of funding as the wireline carrier, without any reference to their cost structures, is artificial. It is also clearly inconsistent with the law, which under Section 254(e) requires all funds to go to supported services. I believe the law compels us to change the basis on which we provide support to competitors."*

OPASTCO applauds Commissioners Copps and Adelstein for demanding that CETCs' USF High-Cost program support no longer be based on the incumbent's costs. Eliminating the identical support rule would be an important first step towards shoring up the Fund. ■

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### After Missoula?...

by Keith Oliver

**F**or over 20 years, in fact since divestiture in 1984, rural rate of return (RoR) local exchange carriers have depended on receiving access charges, or more broadly intercarrier compensation, to sustain service to the rural areas we serve. But what does the future hold for this "temporary" settlement system created to enable the break up of the old Bell Operating System?

For more than five years, our industry has debated intercarrier compensation reform. Numerous organizations, groups, and individuals – all dedicated to the task of "access reform" – have spent countless hours in this effort. Through the guidance and prodding of the National Association of Regulatory Utility Commissioners (NARUC), a number of these groups worked together to develop a consensus plan and became known as the Missoula Group.

Thanks to hard work and effort, the Missoula Group has crafted a plan to address some of the industry's more immediate intercarrier compensation challenges. After all of the time, sweat and tears that have been expended by so many, it could be said that the Missoula Plan is perhaps our last, and best, chance for meaningful intercarrier compensation reform.

Yet, even with all of the work that has gone into the process leading up to the Missoula Plan, it is universally seen by both the plan's proponents and detractors as a transition plan. While on balance, the Missoula Plan will be beneficial to rural RoR companies, I am concerned that the plan may very well become obsolete before it can be implemented. In addition, I worry that, by putting so much of our resources and emphasis on this admitted "transition plan," we may be avoiding even more critical problems and missing opportunities

for the entire industry to work towards a more comprehensive solution. As the rural RoR companies, we need to have the foresight to look beyond the immediate issues that the Missoula Plan addresses towards the broader issues we must resolve to ensure our ability to continue providing quality services to rural America.

This article is intended to stimulate thinking about how we will recover our costs in the future. Let's assume that the Missoula Plan is adopted as proposed. What would its passage mean to the rural, RoR company industry? What happens after the Missoula Plan is implemented? What major problems does the Missoula Plan solve, but more importantly, what is left undone? Even worse perhaps, what happens if the Missoula Plan languishes before the FCC for an indefinite period of time? Is it time that we look to create a whole new system, much as was required when we abandoned the previous division or revenue pools for the new "access charge" intercarrier system in 1984? I ask you to consider for a moment, what comes "After Missoula?"

### The Missoula Plan

The Missoula Plan was crafted to resolve several vexing, long-term problems facing our industry. It attempts to provide a unified intercarrier compensation rate to eliminate the arbitrage problems our companies have faced for more than 20 years. The plan stops short of reaching this goal for smaller Tier III companies, but it does unify state and interstate access charges. It requires carriers to properly identify traffic in order to resolve the phantom traffic problem we have struggled with for years.

But it remains to be seen if revenue gains associated with the billing of this newly identified traffic will flow to the rural LECs, or instead will reduce the new access recovery mechanism proposed by the plan. Also, the Missoula Plan attempts to create a separate recovery mechanism for reductions in access charges which would be non-portable in order to keep it from ballooning the existing Universal Service Fund (USF). The Missoula Plan's new recovery mechanism would be funded in the

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same manner as existing USF programs. And a recent addition to the plan clarifies how states that previously reduced their access charges would be treated. This addition creates a new national benchmark for local service rates.

Thus, from a broad viewpoint, the Missoula Plan eliminates state/interstate arbitrage, resolves the phantom traffic issue, and establishes a separate, non-portable fund to recover reduced intrastate access charges. Not bad work, if the plan is approved as proposed. But does the plan go far enough? What would remain to be done even after the plan is adopted? What does the Missoula Plan leave undone?

First, although the Missoula Plan deals with state/interstate arbitrage, it does not deal with what I call technology arbitrage. Second, it fails to address the growing pressure on the USF and, as we will see, perhaps makes this problem worse. Third, the plan fails to address the broadband world we are rapidly creating.

Before I examine each of these concerns in more detail, let's consider if it is fair to expect any one intercarrier compensation reform plan to resolve all of these issues. The Missoula Plan may well have achieved all that was possible while maintaining a consensus within the group. But, given the importance of the remaining issues and their relationship to the proposed plan, I believe it is fair to ask how this plan will resolve those issues. Specifically, does the Missoula Plan create a road map leading to their resolution? Or does the plan facilitate future solutions to developing intercarrier problems? In that light, let us take a closer look at each of the three issues that loom on our horizon.

### **Technology Arbitrage**

While tackling the industry's existing intrastate/interstate arbitrage issue, the Missoula Plan does not address an even more insidious arbitrage problem. For lack of a better term, I will call it technology arbitrage. I am, of course, referring to the disparate treatment of traffic over the IP network, so called voice over

Internet protocol (VoIP). The FCC has made clear that traffic on the IP network is not subject to access charges. Only when traffic comes back into the traditional circuit-switched network do access charges apply.

Thus, a powerful new arbitrage incentive is emerging – utilize the traditional circuit-switched network and pay minute of use (MOU) access charges, or utilize the IP network and escape these charges.

The Missoula Plan does lower many Tier III carriers' intrastate access rates. However, it does nothing for at least five years to reduce interstate rates, giving the larger users a strong incentive to avoid our circuit-switched networks. Our experience is that IP bypass predominately has taken the form of originating traffic, which returns to the public switched telephone network (PSTN) for termination. This is a concern as we lose customers and originating traffic to service providers like Vonage.

However, an even more menacing threat looms as more providers, such as cable TV providers, large LECs and even rural LECs, introduce VoIP calling plans. This expansion of VoIP providers is leading to an explosion of private electronic numbering (E-NUM) databases, which allow the look up and conversion of North American Numbering Plan (NANP) numbers into IP addresses. This conversion allows for the termination of a call to a broadband connection regardless of how it was originated. A public ENUM database is scheduled to launch by year's end, making conversion from numbers to IP addresses available to all VoIP providers.

This means the IP network is set to become a two-way voice network and a full-fledged competitor for voice traffic to the traditional circuit-switched network. No longer will we simply face the loss of originating traffic, but terminating traffic as well. Unfortunately, our VoIP competitors will have a major, strategic advantage over our traditional network: no MOU access charges. Although this may not be important for small volume users, it will be a huge advantage for larger volume users.

To make this situation even worse, it is likely that the large IP networks will form peering arrangements. We will likely see the rise of "on network" calling plans similar to AT&T's new calling plans where calls that originate and terminate on its network are free. Similarly, it is likely that VoIP providers will create plans where calls on the VoIP network are offered flat rate treatment, but off-network calls to the circuit-switched network will get hit with per call or per MOU fees. This will accelerate the flight of traffic off of the traditional circuit-switched network and onto the IP networks.

In addition to the loss of revenue associated with the lost traffic, we will likely see our expenses increase. We will not be large enough to enter into peering arrangements and, thus, we either will be required to pay terminating charges to complete our customers' calls, or facility costs to get our customers' calls to the terminating point.

The Missoula Plan's goal of equalizing access charges within the circuit-switched network does not address the transition to the IP world. In fact, by locking in existing rate disparities, we are left without the ability to successfully make that transition. We cannot reform inter-carrier compensation on the circuit-switched network without addressing how the IP network will impact circuit-switched traffic. And we cannot afford to enact reform that would leave higher regulatory fees in place for the circuit-switched network in relation to the IP network, as this would have the effect of hastening the demise of rural ROR carriers' embedded network.

### *Pressure on Universal Service*

The Missoula Plan is billed as intercarrier compensation reform, not universal service reform. But, these two issues are intrinsically linked. We need look no further than past access reform to understand that dollars reduced from access rates end up being considered universal service funds. The small company members of the Missoula Group have attempted to carve out the plan's small company funding and create a non-portable

bulk access type fund. The other members of the Missoula Group have not agreed to this approach, leaving the final resolution up to the FCC.

Either way, the plan contemplates common funding with existing federal USF programs. This means the end-user will see a single charge on his bill for the recovery of both USF and the dollars required to fund the Missoula Plan. Therefore, regardless of how the new fund is defined, it is likely to be viewed by customers as simply part of the federal USF programs. The additional demand on funds will increase the charge required on the customer's bill, and this, in turn, will likely increase pressure to cap or reduce the Fund, including the new dollars moved into the Fund.

### *Broadband Networks*

This issue is similar to our discussion addressing technology arbitrage. But rather than focusing on differences between broadband and circuit-switch settlements, the question is how we will fund the new broadband network many carriers are constructing. As pointed out above, the Missoula Plan only addresses traffic touching the traditional circuit-switched network. This network is being replaced with the new IP-based broadband network. In fact, as stated earlier, the continued use of the existing MOU inter-carrier compensation system will likely hasten the demise of the circuit-switched network as the large users flee to the lower-cost broadband network.

The discussion of how access charge reform impacts our need for a national broadband deployment plan is a topic unto itself, and John Rose's article, in this edition, examines this question. The question my article raises is, will anything similar to existing access charges be applied to traffic over broadband networks? If not, will the end-users be required to fund the entire cost of the broadband network in rural high-cost areas? Or will USF support be available? Currently, traffic exchanged over the broadband network is handed under a peer-to-peer arrangement (i.e., bill and keep) or fee for service, where the user buys access to the IP backbone. Discussing settlement for broadband



traffic leads into the net neutrality quagmire. As smaller carriers, will we be in a position to charge for access to our broadband facilities to large players such as Google and Amazon? Or will they charge us for our customers' access to their content?

### *More Work To Be Done*

As can be seen, adoption of the Missoula Plan, even in the form we support, does not end our problems. Even worse, adoption of the Missoula Plan is far from certain, and the likelihood of getting everything we seek is slim. The Missoula Plan has a multitude of critics. These groups argue the plan is too complex, not consumer friendly, and fails to address long-term reform. This last point is one of the few that both supporters and detractors to the Missoula Plan agree upon. The crafters of the Missoula Plan portray the plan as a transition plan. However, a key question is: transition to what?

I am becoming increasingly concerned about the tremendous drain of both manpower and resources required to sustain the push for the Missoula Plan. In addition, I do not discount the opportunity costs that are involved. After a protracted battle to approve comprehensive intercarrier compensation reform, how long will it be before regulators will again be willing to tackle similar issues, such as those that are mentioned above?

I am concerned that the lengthy delay in getting the plan developed and approved means technology will render the plan obsolete before it can even be fully implemented. So in the end, we would resolve a 20-year-old arbitrage issue, while deferring the looming technology arbitrage challenge to a later date. This would place even more pressure on the USF and do nothing to address the emerging broadband network. And regulatory bodies with jurisdiction over our larger issues have limited time and means to devote to rural carriers' concerns. We do not want to exhaust those resources by focusing all of our energies on an intercarrier compensation reform plan that only partially addresses the problems with the current access charge system.

So what needs to be done? First, we need to ensure regulators clearly understand that adoption of the Missoula Plan is not the end of the process; rather, it is just the beginning. To this end, it is critical that efforts to "sell" the Missoula Plan not occur at the expense of regulators' willingness to take additional actions in the near future. We must develop a comprehensive solution that ensures we have the funding necessary to not only maintain our existing circuit-switched network, but also to fully deploy a ubiquitous broadband network.

Second, with development of the Missoula Plan complete, energy must be devoted to the next step. This next step has to ensure that the regulatory price of utilizing the public switched network is comparable to the regulatory price of utilizing the IP network, thereby, making intercarrier compensation technology neutral.

Perhaps it is time to abandon the existing intercarrier compensation mechanism for a completely new system. This would be comparable to what we did in 1984, when the current system replaced the old division of revenue pools.

However, we cannot allow an antiquated intercarrier compensation system to price our existing circuit-switched network out of existence before its time.

Third, we must realize that serious reform to the existing USF contribution and distribution mechanisms is likely, and we must be proactive on these issues. We should consider whether or not the recovery of legacy circuit-switching and transport costs, which are all that remains in interstate access rates, should be separated from recovery of loop costs.

Perhaps these costs, along with existing local switching support that is currently included in universal service funding, should be recovered in a different manner, rather than as a per MOU access charge. Maybe an assessment on phone numbers or their equivalent which allows access to the PSTN would be a more appropriate way to recover these costs.

And what about loop costs, which will increase drastically with broadband deployment? Should all of these costs be recoverable through universal service funding? Should all who benefit from a ubiquitous broadband network help support the cost of deployment in rural, sparsely-populated areas where the cost to provide service is high? We can no longer just assume that the status quo can be maintained by the USF. We must take a hard, proactive look at universal service funding, and determine which reforms we can support and which proposed changes would destroy our industry.

### Conclusion

The Missoula Plan is a great first step, but it is exactly that, a first step. The race we run is a marathon, not a sprint. Even if the Missoula Plan is adopted as proposed, much work remains to be done – and the time to start this work is now. We cannot afford to wait to see whether or not the Missoula plan is adopted. It is time we turn our attention to the next step.

We must begin to focus on the remaining key challenges we face. We must begin to develop solutions that will enable us to stand ready to continue to provide quality communications

solutions to customers in the rural communities we serve. It is entirely possible that, in doing so, we may leap-frog over the reforms proposed in the Missoula Plan. It's time to consider what comes "After Missoula." ■

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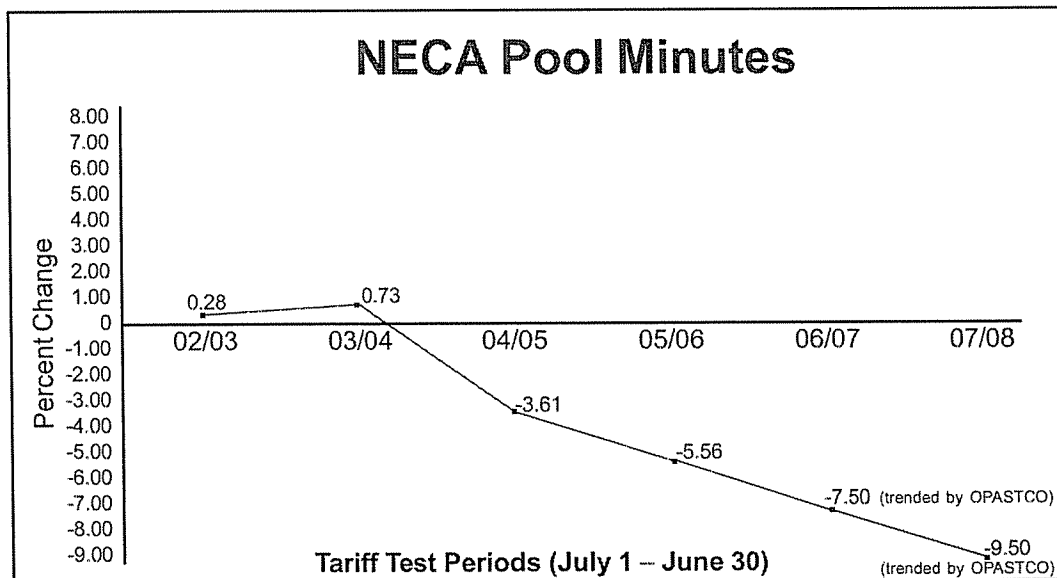
## REPORT

### Fundamental Change Can Be Like The F-117 Nighthawk Stealth Fighter-Bomber

by John N. Rose

*Editor's Note: In the prior article, OPASTCO First Vice Chairman Keith Oliver raised questions regarding whether or not the Missoula Plan can be implemented quickly enough to transition our industry to the IP world. He also asked whether or not more effort should be allocated towards developing a model guiding access revenues in the post-Missoula era.*

*In the following article, OPASTCO President John Rose explains that obtaining a national broadband strategy and support for broadband deployment are the keys to our success.*



The trend is inescapable. The causes are many: e-mails, wireless, instant messaging, Web site substitution for 800 calls, voice over Internet protocol (VoIP), growth of broadband, phantom traffic, etc. An analysis is needed to determine which are the biggest drivers. Solving phantom traffic would moderate this trend. Raising interstate rates to make up for losses may accelerate the trend of declining minutes. Implementation of the electronic numbering (E-NUM) database will certainly accelerate the trend. A 7 percent annual decline would result in a three-year loss of 20 percent in interstate access minutes.



For many years, the U.S. government refused to acknowledge the existence of the F-117. In the current Iraqi war, the F-117 stealth fighter-bomber was known to the Iraqis, but it was still a shock to be on the receiving end of this airplane's formidable attack. Recognizing and adapting to change is always difficult. Fundamental change is even more so. Like the F-117, change sneaks up on you, and then – bam.

The telecommunications industry is undergoing fundamental change and yet, at the same time, the small company local exchange part of the industry is still doing well. The values for small companies bought and sold in 2006 are slightly up over 2005. So, investors value our segment of the industry.

The former long distance carriers (the old AT&T and MCI) were ravaged by fundamental changes and were bought by the regional Bell operating companies (RBOCs). The RBOCs are now losing lines at an alarming rate, as fundamental change has already hit them.

So, when does the F-117 suddenly appear in rural skies?

### *Access Revenues Declining*

For access revenues, I think that the F-117 is already here. See the NECA pool minutes chart on the previous page.

Interstate access minutes are going down. Just like rising global temperatures, we can argue about the causes. We cannot escape the fact that interstate minutes and interstate revenues are now declining. I suspect that intrastate minutes and revenues are in the same situation.

What is unclear is what is the cause. Some claim that phantom traffic is the dominant cause even though the industry has no real documentation. Although this may be true, it ignores the F-117 in the sky, and the fact that fundamental change is upon us.

If access rates were to decline by 7 percent per year, then this represents a 20 percent decline in minutes over a three-year period. Then, access

rates need to be raised from roughly 2.1¢ to 2.6¢. This is a “back of the envelope” calculation that may or may not be accurate. There are other factors that could also drive minutes down and rates up, such as implementation of the E-ENUM database.

What is accurate is that rates will have to go up given the decline. Does the increased rate further accelerate the decline? As a result, do some companies get out of the pool? Does the FCC allow the increase? Does the FCC fix the phantom traffic problem, or does it look at more fundamental things such as rate-of-return (RoR) regulation?

### *We Need to Evolve*

I have gotten into some serious debates with my friends about fundamental change in telecom. One such debate centers around the notion that it is all the same network – both the Internet and the public switched telephone network (PSTN). It all rides the same loop, fiber, switch/gateway and transport and, as a result, should be treated the same by policymakers.

Another point of view says that we have been through these changes before and that the industry should get together and form a new plan like we did during the 1980s. Others see content providers such as Google in the same way that we used to see the interexchange carriers (IXCs) such as AT&T and MCI. The 1982 Modified Final Judgment created the long distance carriers (including AT&T), the RBOCs, and the system of intercarrier access payments. It was not created by the market.

In addition, at the time, then-Assistant Attorney General William Baxter said that all of this would be transparent to the independents. That's foresight for you. Is our foresight just as limited?

The bottom line is that change is difficult, and we want to find ways to remain the same and apply past successful solutions to new problems. That F-117 in the sky overhead won't let us. The differences between the traditional PSTN world and the broadband Internet world are too great for past methods to work.

The PSTN world and the broadband Internet world are fundamentally different as indicated by the chart on the following page. They are different in how they are regulated or not regulated. The technology is different and so is the business model. The Internet backbone is basically a wholesale business. It is not sold to end-users, only to ISPs and certain Web sites. Long distance has always been a retail service with access as the wholesale piece between carriers. This difference is fundamental.

### *The New Access Model: Peering Arrangements*

For intercarrier compensation, the new model is already here. It is not based on regulation as access is. It is not based on the Modified Final Judgment as access was. It is not based on the fact that in the PSTN world, there is a retail carrier (AT&T) in the middle that sells a retail service to the customer.

The new model is more like bill and keep, where a local exchange carrier sells the end-user customer and pays to large network providers to do whatever. This is the opposite of access. Access revenues flow one way to the local company. The new model is peering arrangements among large Internet backbone providers and large ISPs.

In contrast to the intercarrier compensation debate, there are not too many companies griping about this unregulated arrangement. It would take a lot of initiative to change this arrangement. As we know from the Missoula Plan, policymakers are slow to make changes, particularly when there is disagreement in the industry.

So where does this leave us? I believe that the Missoula Plan is a great transition plan that can make rural telecommunications whole until we can figure out what to do about that F-117. (At an OPASTCO convention, Gene Johnson of FairPoint used a "train wreck" analogy for universal service. Trains are old, and F-117s are new. I have moved on, even though I love trains. Gene Johnson has moved on also as his acquisition of Vermont, New Hampshire, and Maine from Verizon has decreased his dependence on the Universal Service Fund (USF) and access charges from

50 percent to 25 percent.) At a minimum, fixing phantom traffic would help and give us some time. But make no mistake about assuming that the Missoula Plan, or fixing phantom traffic, is anything but a short-term solution. Our access world has changed, and we need to move on.

### *What Our Industry Needs*

If not access, then what? I believe that we need two things:

1. A national broadband policy including USF support for high-speed broadband.
2. A rational transition plan to facilitate the move to high-speed broadband.

There is much interest in Congress and at the FCC concerning broadband take rates. One hears policymakers lament that we are 20<sup>th</sup> in the world in broadband deployment. Others say a national broadband policy is the same thing as an "industrial policy," which many have always hated. It is interesting that when opponents of industrial policy want to accomplish something in that area, they rename it.

For example, the interstate highway system was called a defense project. Another example is that automobile growth was attributed to the free market. Nothing was said about the fact that automobiles ride on roads that are built by the government. How different are roads/automobiles from broadband/content? There are even those who say that broadband allows for greater competition from overseas and thus hurts our economy.

Getting a national broadband policy and a transition will not be easy. It may very well depend on the next election.

In the meantime, the local exchange carrier business has to evolve to meet the fundamental changes that are occurring. The Telecom Act of 1996 was enacted 11 years ago. Since that time, we have seen the rise and fall of the dot coms, the technology crash of 2000-2001, the mega mergers of the RBOCs and the IXC's, the birth and dominance of Google, the growth of personal computers' hard drives to massive proportions, and the growth and dominance of broadband.

## PSTN World vs. Broadband World

Regulations		
	Traditional PSTN	Broadband & IP World
End-User	regulated	RoR = regulated Price Cap = unregulated
Inter-carrier Compensation	regulated	not regulated
Service Quality	regulated	not regulated
Pooling	only under regulation	if broadband is regulated, then yes, pooling is possible for broadband
Jurisdiction	state and federal	federal only
Taxes	federal excise taxes	tax moratorium enacted by Congress
Technology		
Network Intelligence	mostly in the switching network.	much is located at the end-user or Web site
Switching / Routing	switching is expensive and less-supported than before, may be able to rent in the future from central source	inexpensive routers; will be able to move and better prioritize traffic
Transport	costs covered in NECA pools	significant increase in capacity will be needed; end-user will most likely need to pay
Business Model		
Voice Applications	regulated	not regulated
Customer Control	no	much more so
Inter-carrier Compensation	yes	no
Wholesale / Retail	retail	wholesale
Pricing / Tariffs	tariffs	contracts and pricing

Yet, the independent local exchange carrier industry has had relative stability until recently. Now, that is beginning to change. Even the Multi-Association Group (MAG) Plan helped maintain stability. It transferred revenues from the access pocket to the USF pocket. It kept the industry whole. The problem is that it funded our competitors and bloated the USF, which is now a big problem.

### *Network Neutrality*

The net neutrality debate is very much a result of fundamental change. The Internet backbone and the broadband connection to customers are under pressure to provide greater and greater speeds and capacity. The use of the Internet is exploding primarily as a result of video. The question is how do we as a country keep up, and who pays for the new capacities and speed?

There is no real argument that the end-user bandwidth hogs should pay their fair share. The big argument is between the large network providers and the large content providers. The large network providers say the big bandwidth content providers, such as Google with its huge ad revenues, should have to help pay for the upcoming network bandwidth expansion. As automobiles need adequate highways, content needs sufficient bandwidth.

This debate is part of the fundamental change and its resolution, or lack of a resolution, and will very much affect the independent industry. It is far beyond the Missoula Plan. It is far beyond the Modified Final Judgment. It is a debate about the future of commerce in this country. It is about competition, regulation, what networks control, and what end-user customers control.

### *After the Missoula Plan*

So what is after Missoula? I believe it is reforming the USF and making the successful transition to being the low-cost broadband provider. After Missoula also raises questions about the future of pooling. As access revenues decline and regulated services move to market-based pricing, then how does pooling work? As an industry, we need to think about this question. From 1970 through the mid-1980s, we had settlements with AT&T, which is another

name for pooling. Since the mid-1980s, we have had pooling under the National Exchange Carrier Association (NECA). Settlements and pooling were based on regulation of a circuit-switched regulated world for both large and small companies.

This has changed dramatically for the large telecom providers, and we have a whole new group of content providers in the picture. The content providers have captured a majority of the advertising revenues and have given the customer vast choices – choices that will never be given up by the customer. With these dramatic changes, how will we make pooling continue? Will it be a target of the F-117 stealth fighter-bombers?

### *Conclusion*

In the article "After Missoula," Keith Oliver states that it is time to consider what comes "after Missoula." I'll take it a step further. What comes after access, pooling, and regulation as we now know it? The change is fundamental. The F-117s are now in our skies. ■

## *opinion*

## SECTION

### **Technological Convergence And Customer Control: New Challenges for Rural Carriers**

*by John McHugh*

**T**wo recent developments in the telecommunications industry are transforming many different service providers' applications and will eventually migrate into even the most difficult-to-serve rural areas. These advanced capabilities are the convergence of access technologies and end-users' desires to choose which services and applications they use. There are two major substantiating reasons why small carriers should be concerned about these issues. First, they can be implemented today. Second, they make it easier for large companies to compete in rural America.

### *Fixed Mobile Convergence*

Convergence of access technologies brings both new opportunities and threats to rural service providers. Wireless operators are now starting to deploy fixed-mobile convergence (FMC) technology in their networks. FMC allows customers to use a dual-mode device that can access either a fixed wireless network like Wi-Fi, or a mobile cellular or WiMax network, seamlessly. This capability can also be interfaced with a standard fixed wired line through the use of a simple access device that connects the wireless set to the wired service.

FMC will be a major stepping stone towards deployment of IP multi-media subsystems (IMS). With IP as the base underlying protocol, any access technology that carries media including voice, data, or video using IP can be converged under a single IMS architecture.

IMS itself is not a new technology. It is an open set of standards that allows for existing protocols like session initiation protocol (SIP) to interoperate over distinctly different access technologies. Through the use of IMS, wired, wireless, packet cable, and IP-based broadband technologies will all operate using a single platform, resulting in true integration of the public switched telephone network (PSTN) and the Internet.

The threat convergence brings is that it will allow a large wireless carrier, whose service area overlaps many smaller local exchange carrier (LEC) rate centers, to offer customers a suite of services that all interoperate over an IP-capable cable system, an IP-based broadband-capable Wi-Fi connection, a mobile wireless connection, a WiMax connection, and even over the LEC's own DSL connections. All IP-based services, now offered by the three distinct access technologies including wired, wireless, and cable, can be managed by the single IMS platform. This enables the customer to contract with a single service provider for a multitude of service offerings.

There is clear evidence that this convergence is now being explored by large companies. Sprint/Nextel and the major cable companies have announced a joint effort to develop plans for a cable/wireless converged broadband network.

The wireless piece will be supplied by Sprint/Nextel's planned WiMax buildout, which is forecast to bring broadband capability to 100 million subscribers in 2008. The wireline piece will come via the cable industry's 30 million-plus high-speed data customers. There is no doubt that the other major wireless companies will follow similar paths towards convergence.

Although this concern is not immediate, rural LECs should pay close attention to the cable industry's ability to provide for inter-company exchange of their "digital voice" service via the use of E-NUM-type databases. This could result in total bypass of circuit-switched networks by the cable industry's reported 8.5 million, and growing, residential voice customers.

Opportunities to build partnership to provide infrastructure to assist broadband wireless network buildouts should interest rural LECs. Small companies can also consider partnering with a wireless carrier to provide fixed and mobile access for that carrier's customers. Cable companies that offer a digital voice service may be in need of a database provider who can offer interconnectivity routing data lookups for voice traffic that is leaving their networks.

IMS may be the most intriguing opportunity of all. There are so many pieces that can be deployed in order to construct a viable IMS platform that small companies should be able to find a piece of the pie that fits their current capabilities.

### *Customers Demand Choices*

Customers are rapidly demanding the ability to choose which services they want and from whom they obtain them. This became very apparent as soon as customers were able to go to retail stores to purchase a simple device, to download free software, and, for a very low monthly rate, to obtain voice calling service throughout the country and around the world. When customers obtained this ability, rural LECs began to see IP-enabled devices directly purchased by end-users being connected to rural broadband networks. As a result, more and more IP customer premises equipment (CPE) devices, services, and applications are being made available directly to consumers.



This creates problems for the rural service provider. Even though the devices' labels say "plug it in and it works," it usually doesn't work the first time, and, of course, this leads to a maintenance call. This presents a threat to the carrier because the customer's perception of the service provider may be harmed if problems caused by IP-enabled CPE compatibility issues cannot be resolved quickly.

Rural service providers have new opportunities to offer home gateway and home networking installation and maintenance services. Offering these services can give customers more control over the services they choose, but it also offers rural service providers the ability to recommend, install, inventory and maintain devices chosen by their customers.

Several companies already offer this type of service. One in particular has already contracted with over 1,500 customers to offer home network installation services, along with component configuration. Their broadband penetration and sales of video and high-speed data services have increased since initially rolling out their home-networking services.

How will consumer choice impact carriers' IPTV offerings? There is a significant distinction between content that is obtained via an Internet connection from some distant server, and content provided by a local headend that is delivered to the customer over an IP-capable broadband access technology such as DSL. The challenge for rural LECs will come from direct downloads of programs from Internet sites. Once customers have more control over, and obtain

more access to, what they want to see and when, current channel lineups of closed, proprietary IPTV systems could be impacted.

For example, if premium channels were made available over the Internet from, say, Google for a fraction of the cost of providing them via IPTV, the rural LEC would stand to lose revenue.

The good news is that rural customers would require greater bandwidth and quality control. The bad news is the cost to provision both in high-cost rural areas. In addition, the backbone connection to allow more Internet programming to be delivered to rural customers would need to be expanded to handle the increased demand.

### Conclusion

Convergence of voice and IP-enabled services over wireline and wireless networks that are interoperable, combined with the implications of customers' increasing demand for control over how they use products and services, represent challenges for rural LECs. Technological changes are making it possible to bypass rural networks and steal customers. OPASTCO members have to be ready to adapt to this new competitive landscape to minimize the threats and make the most of these new opportunities.

The following chart summarizes additional changes occurring around the industry that rural carriers must respond to in the coming years. Each presents new opportunities for small companies to broaden the scope of their service offerings and better serve their rural customers. ■

## More Challenges Facing Rural Providers

Fact	Threat	Opportunity
AT&T wireless broadband <sup>1</sup> Verizon wireless broadband Proposed M2Z buildout <sup>2</sup>	Competition for DSL in rural areas	Build out partnerships, infrastructure sharing
AT&T sells 2.5 GHz to Clearwire, whose IPO nets \$600 million <sup>1</sup>	Building in Tier II markets for now	Will need backhaul, tower sites
Sprint-Nextel build out to \$100 million by 2008 <sup>3,4</sup>	Nationwide broadband, intent to eliminate wireline backhaul, DSL competition	Do the same as above
AT&T in municipal WiFi, will connect to wireless backhaul <sup>3,4</sup>	Your area may be next	Possible new line of business
Major cable and Sprint-Nextel service convergence initiative <sup>3,4</sup>	Rural network bypass	Backroom telephony support, gateway to the PSTN
Cable VoIP and ENUM interconnected cable digital voice services	Complete PSTN bypass	Offer VoIP and get involved in the ENUM rollout
Industry moving to IP	New services, mobility, and convergence	Join the movement
Verizon wireless testing Nortel fixed mobile convergence <sup>3,4</sup>	Fixed/mobile wireless broadband via the same service provider	A new line of business
Geek Squad / Fire Dog in-home configuration	Can up-sell your customers, direct them to competition	Good line of business, increase revenue, keep the customer

### Additional Notes

1. AT&T plans to spend \$750 million to improve global IP backbone and access capabilities.
2. Four additional petitions have recently been filed requesting "free use of spectrum."
3. Use of white space (idle TV channels) spectrum to deliver high-speed Internet access is being tested by the FCC for interference concerns. This spectrum is perfect for delivering broadband service to rural areas. This Initiative is backed by Microsoft, Google, Dell, Hewlett-Packard, Intel, and Phillips. If approved by the Commission, devices will be generally available by 2009.
4. The Wireless Internet Service Providers Association (WISPA) and Part15.org are also pursuing use of white space for wireless broadband use, especially in rural areas.

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